Janney Montgomery Scott INC

INTERCONNECTION 96-98

Focus on the Federal Communications Commission

1801 Market Street,
Philadelphia, PA 19103
(215) 665-6000
(800) 526-6397

26 Broadway,
New York, NY 10004
(212) 510-0800

Members:

New York Stock Exchange, Inc.
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Philadelphia Stock Exchange, Inc.

ANNA-MARIA KOVACS, Ph.D.
(617) 661-4666

INDUSTRY UPDATE
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KEY FCC RULINGS WILL TRANSFORM THE TELECOM INDUSTRY

The financials of all parts of the telecommunications industry will be transformed over the next few years through a series of actions that were initiated by the passage of the Telecom Act of 1996. Parts of the industry that are already competitive will become more competitive, and sectors that have been monopolies are about to become competitive as well. Regional Bells (RBOCs) will enter long distance and equipment manufacturing, increasing competition in each of these sectors. Long distance companies (IXCs), competitive access providers (CAPs), cable companies (CATVs), wireless players and others will enter the LEC business (local exchange companies, of which RBOCs are a subset). Thus, the local telephony monopoly will turn into a competitive arena. At the same time, wireless cable (MMDS), direct broadcast satellite (DBS) and, ultimately, upgraded telephone networks will bring increased competition to cable-TV. All this competitive activity should, in theory, create major market-share shifts among players, lower prices and increase demand. Whether and when all that happens will depend in very large part on the activities of the Federal Communications Commission and of state utility commissions as they implement the Act.

Upcoming FCC activity on key financial issues will have an important effect on the telecommunications industry. These include:

- **Sections 251 and 252 of the Telecom Act, the checklist: Order by August 8, 1996.**
- **RBOC long distance entry applications beginning after August 8, 1996.**
- **Universal Service proceeding: Joint Board Report by September; Order due by June 1997.**
- **Access-charge restructuring: proceeding initiated summer of 1996; Order likely by May of 1997, simultaneously with the Universal Service Order.**

It is critical for investors to understand that the Telecom Act of 1996 set into motion not only the potential for substantial market share shifts, but an enormous rate rebalancing effort. Through the more or less simultaneous proceedings on: (1) interconnection, unbundling and resale, (2) access reform, and (3) universal service, the FCC could, and probably will, transform the rate structure of the industry. Not only will it transform the local telcos' revenue streams, it will significantly change the cost structure facing the IXCs, CAPs, and even the CATVs. That is because the local telcos' network is one of the key cost components to those players, who use the LEC network to supplement their own networks to reach end-users. In addition, by determining the timing of RBOC entry into in-region long distance, the FCC will determine the point at which large revenue streams open up to the RBOCs and greater competitive pressure faces the IXCs. The FCC will also engage in many other proceedings over the next year, but in terms of sheer dollar impact, these are the critical ones. They are, therefore, the ones on which we will focus.

LOCAL COMPETITION WILL SQUEEZE THE LECs

Until specific rules are promulgated by the FCC and rates based on those rules are set by the states, it is impossible to determine the precise impact of these proceedings on any company's revenues and earnings. But the direction is clear: LEC revenues from the sale of many services and

products will go down, perhaps quite sharply down. To what extent the resulting gap will be filled by new services including long distance and video as well as by the Universal Service Fund (USF) is the key unanswered question for the LECs. The IXC's long-distance margins will improve as a result of lower access charges, at least until the RBOCs enter long-distance and put pressure on long distance revenues. Thus, the key unanswered question for the IXCs is how soon RBOC entry into long distance will occur, and whether the FCC's section 251/252 rules will make entry into the local business easy and profitable.

The pressure on LEC revenues will come from share loss, from the conversion of retail traffic to wholesale traffic, and from access-charge reform. Market share loss will take several forms: to facilities-based service providers, to resellers of the full line, and to unbundlers of the LEC network. The revenues gained by a facilities-based competitor are fully diverted from the LEC's network. Resellers and unbundlers only partially divert revenues. Resellers will buy complete access lines from the LEC at a discount from the retail price at which the line is offered to end-users. Unbundlers of the network will be able to lease elements of the network, so that they can combine them with other unbundled elements and with their own facilities. The Telecom Act requires unbundled elements to be priced at cost plus a reasonable profit. It requires resold lines to be priced at retail minus avoided cost. There is currently debate also whether the Act allows for virtual unbundling, which is essentially resale under the unbundled tariff. The unbundled and resale tariffs are very different. That difference creates significant opportunities for arbitrage.

THE COST STRUCTURE OF WIRED NETWORKS

To understand why the Telecom Act mandates resale and unbundling, it is important to understand the cost structure of wired networks. Wired telephony networks, and for that matter wired cable networks, are essentially fixed-cost platforms. Most of the investment must be made up-front and the operating cost of running the network is not much less at low penetration than it is at high penetration levels. Not only are the costs highly fixed, they are also highly shared, both between subscribers and services. In other words, cost is largely a function of homes passed, not of subscribership or, in many cases, of the particular services provided. Depending on the services in question, costs may not be very sensitive to the addition of new services. For example, while it is expensive to add video to a telephony network, because it requires new cabling and new electronics, it is not expensive to add caller-ID or voice-messaging, which require only the addition of some software or processor capability. Similarly, the local network does not care whether it is providing access for a local call or a long-distance call: it uses the same plant in either case. And, for that matter, it uses the same plant to reach the subscriber for messaging and caller-ID.

Revenues, on the other hand, are only collected from actual subscribers, not from homes passed that are not subscribing. Furthermore, they are usually charged on a combination of flat-rate, usage-sensitive, and service basis. Thus, total revenues on a network are very sensitive to subscribership, usage, and the services provided, but neither assets invested nor cost are very sensitive to those factors. What that means to the bottom line is that return on assets is almost entirely a function of total revenues, since both total assets and total costs are largely fixed. **Another way to say the same thing is that penetration is one of the most important factors affecting unit cost, and therefore profitability. Average cost per subscriber declines as penetration increases and, conversely, rises as penetration falls.** Revenue per subscriber, on the other hand, is flat on average, regardless of penetration. Thus, increased penetration, directly results in a higher margin.

This simple fact has enormous implications. It means that barriers to both entry and exit are steep. It is difficult for a new entrant to survive unless it reaches a fairly high level of penetration on its network or can somehow reach unusually

high revenue per subscriber. The incumbent looks at the same picture from the other side. With share loss, the incumbent sees its cost per remaining subscriber rise sharply and automatically, despite any efforts it might make to contain costs. It means that telephony is not merely a zero-sum game, but a negative sum game. That is, as the new player introduces new costs into the system, the old player cannot reduce his by an equal or greater amount. This is why telephony has traditionally been considered a natural monopoly.

It is important to remember, however, that in real life, subscribers do not have identical usage levels and, therefore, do not generate identical revenues. But, in any given geographic area, they do generate fairly similar costs. Thus, new entrants can move toward profitability more rapidly by targeting low cost areas and aiming for subscribers who will generate above-average revenues. That has essentially been the strategy of the CAPs, who have focused on low-cost urban areas and high-revenue business customers. Creating new services or a higher perceived-value for existing ones is one way to raise revenue per subscriber. Cream skimming is another. Thus, to optimize its profits, a new entrant will aim for the highest possible penetration of the highest-revenue-per-subscriber users in the lowest-cost geographic areas. The new entrant's cream skimming only exacerbates the incumbent's dilemma. The LEC's costs per subscriber still rise automatically, but its revenue per remaining average subscriber declines, since the high end is being removed from the average.

OVERCOMING BARRIERS TO ENTRY

It is to help new competitors overcome entry barriers that the Telecom Act requires the LECs to open their networks to competitors. As mentioned above, unbundling and resale are two key mechanisms to accomplish this goal. Let us first look at unbundling. It is supposed to be priced at cost plus a reasonable profit. Where the retail rate for a product or service is now highly profitable, the elements that make up that product or service will probably be made available at a discount from retail. In those cases where the retail rate today is unprofitable, because the cost is higher than the retail rate, the unbundled rate may be set above retail. We say may, rather than must, because the Act did not specify what cost standard the FCC and the states must use in setting the unbundled rates. That, in fact, is one of the biggest decisions the FCC must make. Depending on the standard used, the unbundled elements could add up to more or less than the current retail price. Now let us look at resale. Because resale is mandated by law at retail minus avoided cost, the resold total line will almost surely be priced below retail. In those cases where the retail price is below cost, the resale rate will be even further below cost.

These options lower the new entrants' cost. Rather than suffering through the high cost-per-unit imposed by their own low penetration rates, the entrants can lease the line at wholesale or unbundled rates that reflect the benefits of the incumbent's high penetration levels. They effectively enter at the high penetration end of the curve, rather than struggling through the low end. Where their own costs are low, of course, the new entrants can use their own facilities. Obviously, the new entrants will arbitrage all these possibilities in the way that is most economic for them. Revenues as well as costs enter the arbitrage equation. Unbundlers can keep access charges, resellers cannot. Unbundlers also keep far more of the profits from value-added services. Thus, entrants will unbundle high revenue lines and resell low revenue ones.

THE SQUEEZE IS ON

Clearly the ability to arbitrage those options will create a squeeze on LEC revenues and earnings. The new entrant's optimal strategy obviously is to cream skim the heavy users on an unbundled basis, and resell the lines of the rest. Furthermore, given a choice, the entrant will not actively market to the low end. As it builds volume, the entrant will divert even more revenues from the LEC, by replacing more and more resold lines and unbundled elements with owned facilities. Thus, in each of these cases, the LEC's take from the end-user is reduced. It is eliminated

completely if the user is moved to the new entrant's facilities. It is reduced by a set percentage if the line is resold. If the line is unbundled, it is reduced by the difference between the original revenue on that line and the new flat-rate unbundled price. **To put it another way, if the end-user is being served unprofitably by the LEC, no rational new entrant will target him. If the end-user is being served profitably, he will be targeted in the way that optimizes the new entrant's profits. The various possibilities for arbitrage created by the Act combined with the political difficulty of raising local rates to cost make a squeeze on LEC profits inevitable.**

ACCESS CHARGE RESTRUCTURING AND THE UNIVERSAL SERVICE FUND

Access restructuring may well make the LECs' problems more severe, or at least more immediate. AT&T (T-$61), MCI (MCIC-$25) and others have proposed that switched access charges be reduced now to cover some variant of the long run incremental cost of access. By most estimates, that would reduce access charges by 66-90% from their current levels, from 2.5 to 3.0 cents per minute today to 0.2 to 1.0 cents per minute. If that were done in isolation, it would be enough to wipe out much of the profitability of the entire LEC industry, since switched access charges represent about 18% of industry revenues and operating profits represent 22% of industry revenues. We hasten to say that we do not expect the FCC to take actions that would suddenly annihilate the LECs. Not only would that be expropriation of property, but it would threaten universal service, which the Telecom Act clearly wants to protect. Congress did not, however, make it easy for the FCC to protect either universal service or the LECs.

Congress anticipated some squeeze on the LECs and prescribed the Universal Service Fund (USF), which is supposed to help compensate for at least part of the gap. However, the USF is not explicitly designed to deal with the full magnitude of the financial problems that deregulation and competition will create for the LECs. Congress framed the USF issue in the context of subsidizing service to rural and low-income subscribers, and to education and healthcare providers. The USF is not explicitly designed to absorb all other cross-subsidies. Congress mandates preservation of universal service, but it does not create a mechanism that assures the health and profitability of the LECs, who are the only ones able to provide universal service at the moment. Thus, while the Telecom Act places no price ticket on the universal service problem, it appears to imply one that is fairly small. In fact, the squeeze in the LECs is likely to be very large.

An additional problem is that the Act can be interpreted as decreeing that the USF should be funded by all telecom service providers, including the LECS. If the USF is funded that way, it will not do much to solve the LECs' shortfall. Much of the money is likely to simply shift from one LEC pocket to another, rather than flowing to the LECs from the outside. Admittedly, that is the case today. Cross subsidies flow, as mentioned above, among various LEC products and services, as well as from the long-distance and wireless carriers to the LECS. In general, business and urban users subsidize residential and rural users and heavy users of long-distance access and value-added services subsidize users of local telephony.

The cross subsidies are accepted partly because they seem to reflect usage and it seems fair to charge for more usage, which, presumably, provides more utility to the customer. The fact that the cost of a line is essentially fixed, and that usage creates almost no cost, is something the public has never really learned. Thus, the public accepts larger charges for heavy usage although the usage, in reality, creates almost no difference in cost. However, **the new carriers entering the local market understand the industry's fixed cost structure very well and will take advantage of it. The Telecom Act has guaranteed them the ability to operate at the lowest cost, whether that is either their own true cost or the LEC's. In fact, under the resale tariff, it has actually guaranteed them the right to operate below either one's true cost.** As we have already described, new entrants

can build their own facilities, lease unbundled elements, or lease the line in its entirety. These options can be arbitraged against each other in the way that favors the new entrant most. **Therefore, the LEC's ability to recover cross subsidies in one part of its business to cover losses in another will rapidly disappear.**

The LECs themselves will no longer be able to shift money from pocket to pocket because all their pockets will be arbitraged. Thus, they can only be helped by support that comes from outside their own revenues. It is not at all clear that the USF will be designed to provide all the support from others, or to do so in amounts adequate to keep the LECs' earnings whole. At the same time, it is very difficult politically to raise local rates to fully recover the cost of providing local service. **Thus, there is downward pressure toward cost-based prices where those are below retail but an unwillingness to move up to cost-based prices where those are above retail.**

GOOD NEWS FOR THE IXCs

What does all this mean for other industry players? Access reform and unbundling are excellent news for the IXCs. Access is an IXC's biggest cost component by far. Even if we assume that most of the access reductions will be passed through in price cuts, which is likely once RBOCs enter long-distance and intensify the price competition there, the IXCs still benefit. Long distance is a fairly price-elastic product, and price cuts will increase the industry's growth rate. Thus, the IXCs will be facing competition with the wind at their backs. Their price cuts will be painless to them because they will be based on access charge cuts. Those are painful to the LECs, not the IXCs. True, the IXCs will face share loss, but it will be in the context of a rapidly growing industry. If one has to face increased competition, those must be the ideal circumstances in which to face it. The IXCs are at severe risk only if they face RBOC competition in long distance before they can establish themselves in the local market and before switched access charges decrease. That is a scenario we would characterize as potentially devastating but very unlikely to occur.

What is the likely impact of the FCC's actions on the CAPs? To date, their primary raison d'etre has been the ability to undercut access charges. Were those flash-cut, the CAPs would be badly hurt until they could adjust their strategy to arbitrage some other aspect of the RBOCs' networks. Unbundling and reciprocal interconnection, however, do have favorable aspects for them. They allow the CAPs to supplement their own networks at lower cost than they could by building facilities in low volume areas.

What does it mean for the CATVs? The cable companies want to go after residential customers, using their own plant and reselling or leasing it to others. They, thus, need the best possible price umbrella. They would benefit most if local rates and the monthly fixed subscriber line charge (SLC) were raised.

A CLOSER LOOK AT THE CALENDAR

Having discussed these issues at a very theoretical level, let us focus more sharply on the specifics, beginning with the FCC's calendar. By August 8th, the FCC will issue its decisions on the checklist items that must be met by local phone companies to open their markets to competition. This list includes some of the biggest-ticket items, namely unbundling, resale, and interconnection. After that order is issued, applications for long distance entry are likely to be filed by the Regional Bells. By law, the FCC will have to respond to those, positively or negatively, within 90 days. Also this summer, the FCC is likely to issue the Notice of Proposed Rulemaking (NPRM) that will initiate the restructuring of access charges. That process will be finished next spring, simultaneously with the order on universal service.

By August 8th, 1996, the FCC will issue its order on sections 251 and 252 of the Telecom Act of 1996, covering interconnection, unbundling, resale and other parts of the checklist that must be met by the local phone companies. This checklist is also a prerequisite to RBOC long distance entry.

UNBUNDLING

In this order, the FCC will determine the cost standard under which interconnection and unbundled elements can be priced, as well as the basis for resale discounts. Once these standards are set by the FCC and implemented by state commissions, competitors will be able to lease LEC lines in their entirety or in part. In some states, of course, that is already possible as a result of state activity. In those cases, the FCC's decision will either confirm the existing agreements or require some changes to them. As described above, once these rules are in place, competitors will be able to resell a line in its entirety under the resale tariff, at a discount from the LEC's retail rate. Alternately, they will be able to lease and combine the piece-parts with their own facilities, under the unbundled tariff, on a cost-plus basis. They may even be allowed to combine unbundled pieces, without introducing facilities of their own, and thus create "virtual unbundling," that is resale under the unbundled tariff. The competitors will arbitrage these tariffs against each other, and lease under the most favorable rate. It is clear that this will squeeze LEC revenues and margins. What remains to be seen on August 8th and through subsequent state activity is by how much.

The cost standards set by the FCC will have enormous financial impact, particularly if the FCC pre-empts the states and makes the standards national. In order of importance, the issues are: Are unbundled elements and interconnection priced at marginal cost or at something closely resembling their full cost? Does the list of avoided costs that is the basis for resale discounts support large or small discounts? Are interconnection rates symmetrical or asymmetrical between the LEC and its competitors?

It is unclear so far to what extent the FCC will pre-empt the states. There is considerable pressure on the FCC to do so, from the Justice Department as well as from the long-distance carriers and other potential new competitors in the local arena. They all believe that local entry would be facilitated by a single set of rules nationwide. The NPRM issued about this item on April 19th seemed to indicate that a substantial degree of pre-emption is likely. However, some of the state commissions, particularly ones that have already ruled on some of these issues, are eager to retain their discretion over these items. Thus, pre-emption is likely to be one of the hotter political issues. In financial terms, the impact on the LECs is not clear cut. Those local exchange companies whose state commissions are sympathetic to them will do better under greater state discretion. Those with tough commissions are likely to do better if the FCC sets uniform rules. Consequently, the LECs appear to be somewhat divided on this issue.

While no final decision on a cost standard has been made yet, consensus seems to be building in the industry as well as among regulators around a standard called TSLRIC--total service long-run incremental cost. This standard could be used to price unbundled elements, interconnection, and, probably, access charges. This standard would define costs on a forward-looking basis, assuming a newly engineered network that is optimally efficient. It would include both marginal costs and some shared costs associated with any given network element. Included in costs also would be depreciation and a reasonable cost of both debt and equity capital. The concept is pretty clear-cut, but it does come with some variations and its implementation raises some issues.

Just a few of those issues are: How does one define what the optimally efficient network looks like? Is it the same for all LECs in all geographies or are there substantial differences? Given that costs vary enormously with density, will unbundled costs be de-averaged for density or averaged? How should stranded investment be treated? Which shared costs should be included? What are appropriate depreciation rates and cost of capital?

Depending on the answers to these and other issues, the LECs could wind up recovering under TSLRIC as much as they do today under their retail rates, or they could wind up recovering a fairly small fraction of that amount. Various

new entrants are affected also, of course, by this issue. Their positions are quite different, depending on whether they look at the LECs as suppliers of facilities or as competitors in the business of supplying facilities. The IXCs would like to get the lowest possible TSLRIC rates for interconnection, unbundled elements, and access. The competitive access providers (CAPs) and cable companies (CATVs), who either have or plan to build facilities extensively, have a more split agenda. They would like to have the lowest possible interconnection rates, since they will need to interconnect with the LECs extensively. But they would like to see high unbundled rates and access charges, since they compete with the LECs in supplying those facilities and services to others. There, the CAPs and CATVs need a high price umbrella to make their entry viable.

The bottom line challenge for the FCC, then, is to define a cost standard that sets rates at levels that are not confiscatory vs. the LECs, that are low enough to make entry into the local market by the IXCs economic, and that are high enough to make the provision of facilities by CAPs and CATVs viable. That has to be done, of course, within the constraints of the Telecom Act.

HOW FAR WILL LEC REVENUES SHRINK?

One way to help investors gauge the extent to which LEC revenues might shrink as they are converted from retail to wholesale is to focus on some of the data that has been submitted to the FCC. MCI, in some cases jointly with others, has submitted a series of studies by Hatfield Associates. The studies are receiving considerable attention. Our own focus is on the study that was submitted by MCI in March of 1996. Two other studies, also submitted to the FCC for consideration in this process, are related to this March study. The Benchmark Cost Model submitted jointly by MCI, Sprint (FON-$41), NYNEX (NYN-$47) and US West (USW-$31) in December of 1995 was an input to the March model, and both appear to have been inputs to the updated Hatfield model which was submitted jointly by MCI and AT&T in May. Thus, we believe it is important for investors to be aware of the model and to be able to assess the conclusions to which it might lead the FCC and the states.

The March study estimated that the total TSLRIC wholesale cost of the major LECs should be $36 billion (Table 5, page 36). According to the study, the LECs' actual revenues were $82 billion, of which about $24 billion cover customer operations and corporate operations and are therefore unrelated to the wholesale cost of the network. That leaves net actual revenues of roughly $58 billion, of which the model estimates only $36 billion to be justified. Hatfield accounted for most of the $22 billion difference by a category called "capital carrying cost on overbuilt plant," which is calculated by Hatfield at about $18 billion. Most of the rest is attributed to roughly $4 billion in operational inefficiencies. Thus, were the FCC to accept the conclusions of this study, it might set wholesale rates that would total $22 billion less than the LECs' current revenues--assuming total conversion of LEC revenues from retail to wholesale.

We do not expect that to happen, however, for three reasons. One is that we are convinced that the FCC does not plan to destroy the financial viability of any part of the industry. Another is that total conversion of LEC revenues to wholesale is a very unlikely event, since the LECs are not likely to lose 100% market share at the retail level at any point, much less soon. The third reason is that the study generates results that are puzzling, even when tested against the model's own assumptions.

Our comments on the March Hatfield model are based on data and assumptions from the document itself, unless we indicate otherwise. The model postulates that investment by the major LECs should total $131 billion. Hatfield shows "actual investment" of $257 billion, and calculates based on the difference between the ideal $131 billion and that $257 billion that the LECs are benefiting from "capital carrying cost of overbuilt plant" in the amount of $18 billion. However, according to both the ARMIS database and our own calculations of net plant from annual reports, the LECs' net plant is closer to the neighborhood

of $150 billion. The $257 billion is gross plant. It is not clear why Hatfield used the gross plant figure, nor how the LECs could be collecting the $18 billion on the basis of already depreciated plant. If one makes the comparison between the model's $131 billion ideal investment and the actual net plant, the excess plant is only about $20 billion, not $125 billion, as Hatfield calculates. While $20 billion is a large number in any context, it would justify a figure at or below $5 billion, not $18 billion, as "capital carrying cost on overbuilt plant." It is, in fact, quite striking that the model's ideal investment is so close to the LECs' actual net plant, since their plant was based on technologies actually available at the time the investment was made rather than on the model's forward-looking technology. It is also worth highlighting to investors that we do not believe the problems with the March study resulted from the use of TSLRIC as a concept. It is more likely that the problems result from the model itself. Thus, even if we see the FCC adopt the TSLRIC standard, we would not expect it to result in such a radical rate cut.

A different cut at the model, done as a "sanity check," also does not confirm the model's results. We used the model's own assumptions in testing the model. We use the model's $131 billion as the optimal investment. We use the model's 40/60 split for debt and equity and the model's assumptions that 7% is an appropriate cost of debt, 12% is the appropriate cost of capital, and that the tax rate is 40%. Those assumptions generate a total pretax cost of capital of roughly $19 billion. The model also allows for depreciation. We did not see a rate in the text, so we used a 10 year straight-line rate, which generates another $13 billion of revenue requirement. That adds up to $32 billion in revenue requirements to satisfy the costs of capital and depreciation. Based on figure 4 on page 22 of the text, we would also expect to see requirements based on the expenses needed to run the network. Given the $32 billion cost of capital plus depreciation requirement, the $36 billion TSLRIC wholesale cost identified by Hatfield allows only $4 billion for the actual operating costs of the collective LEC network. For comparison, we looked at the equivalent cost for the three major IXCs. That cost, based on their annual reports and investor releases, is roughly $9 billion. It seems unlikely to us that the LECs can be expected to run their collective nationwide network on half the expenses spent by the IXCs. The LECs' network, after all, is far more extensive, since it has to reach every home and business, while the IXCs' network is concentrated on high-density routes. We do not attempt to judge what the appropriate multiple of IXC operating costs should be for the LECs. But it stands to reason that it is not 0.5. In fact, it stands to reason that it is well above 1, given the nature of the two networks. A multiple of 2.6 times the IXCs' costs would bring the total wholesale revenue requirement to the $58 billion that the model claims the LECs actually received. Thus, as we assess the potential revenue shrinkage, we have to assume that the multiple will be somewhere between 1 and 2.6, that is to say that the loss of revenues to the LECs is likely to be substantially less than the $22 billion generated by the Hatfield model. **Having said that, we should note that while we do not expect the FCC to devastate the LECs' financials, neither do we expect the FCC to keep the LECs' revenues whole.**

INTERCONNECTION

Moving on to interconnection rates, the focus of concern becomes less what pricing standard is used than whether pricing is symmetrical between the LECs and their competitors. The reason the pricing standard is of less concern is that it is reasonable to assume that in most cases traffic will flow evenly between the two sides and interconnection charges will wash if they are symmetric. However, if they are not symmetric, then significant funds could flow from one side to the other, most likely from the smaller new entrants to the LECs. Asymmetric pricing is in effect in several states. In New York, for example, under the "pay or play" rules, entrants who are not willing to serve all customers in their serving area pay an average 1.8 cents per minute more to NYNEX for interconnection than NYNEX pays to them. In several states, there is a higher rate for interconnecting at the tandem switch than at the end office. The rationale is that there is more cost

involved in getting to or from the tandem. To get to the tandem, a call first passes through an end office and then is carried over inter-office facilities to the tandem. Since the LEC is present at every end office and the new entrants may well not be able to build to each end office, this rule favors the LEC. Among the new entrants it also favors AT&T, which has more extensive facilities closer to LEC end-offices than other new entrants.

RESALE

The final critical costing issue is resale. Resale, by law, is priced under a completely different method than unbundling. The Telecommunications Act of 1996 requires LECs to resell at wholesale rates any retail telecommunications services that the LECs offer. The wholesale rates are to be determined by state commissions on the basis of retail rates, "excluding the portion thereof attributable to any marketing, billing, collection, and other costs that will be avoided by the local exchange carrier." The conventional phrasing for this has become "retail minus avoided cost." There are a number of state precedents in place already, with discounts that range from 5-25%. The precedent also is to allow the underlying facilities-supplier to retain access charges. All of these are likely to be re-examined in the light of the FCC's guidelines, defining "retail rates" and "avoided cost."

The discount issue is highly controversial. LECs claim that avoided cost is in the range of roughly -10-10%, while IXCs claim that discounts on the order of 20-40% are in order. **As we see it, the crux of the controversy is that there is very little, if any, cost avoided by the LECs when they resell their networks, but there is considerable cost that has to be covered by the new entrants. That is to say, the total cost of resale for the wholesaler and retailer combined is generally greater than if there were only one party involved.** That is because there are now two parties spending on marketing and sales, as well as processing orders, providing pieces of the billing process, dealing with various aspects of customer service, and dealing with the complexities of coordinating with each other. Churn is also greatly increased, generating more cost.

The LECs still have to run their networks, maintain them, process orders, keep track of traffic, etc. They may avoid the cost of billing end-users directly, but they still have to provide billing information to their wholesale customers. Their costs may in fact rise, because the new entrants are likely to cause additional churn beyond normal moves and adds, which will cause more disconnects and connects than the LECs would have had to deal with normally. That not only creates extra one-time costs for the actual connects and disconnects, but is likely to raise overall maintenance costs, the reality being that more "hands in the plant" inevitably increase maintenance problems. Marketing costs are also unlikely to decline for the LECs under competition. If anything, they will have to market more heavily to protect their market share. Thus, we expect little saving on the LEC side to justify much of a resale discount.

There is, however, also a lot of cost on the side of the new entrants. They also have to market heavily, provide customer service, participate in order processing to some extent, keep track of maintenance even if it is actually performed by the LEC, provide a bill and collect revenues, etc. They may need to provide deep price discounts to end-users to gain share. For all these reasons, the interexchange carriers have argued that they need a large discount to make a profitable or at least break-even business out of resale.

It is important to note that the IXCs' argument was apparently rejected by Congress, which chose, after lengthy negotiations, to set a standard based on LEC avoided cost, not on the new entrants' costs or margin requirements. Presumably, Congress envisions resale as a small-scale, short term transition mechanism, and prefers to encourage new entrants to build their own facilities rather than simply resell the incumbent's network. The problem with that is that it takes a lot of volume to justify the building of facilities. In dense business areas, it may not be too difficult to build enough volume and revenues to get a decent return on a

fiber ring. But in less dense areas and in residential areas, in particular, it takes a lot of market share to create enough volume to justify a second network. Thus, resale can be an important share-building mechanism, particularly in the residential market, for anyone starting a new network.

However, for those who already have a network in place or ready to upgrade, LEC resale is a source of competition. Thus, the picture is further complicated by the split among the new entrants. The CAPs and CATVs, who have facilities in place or hope to upgrade their networks to provide facilities to the IXCs in competition with the LECs, would like to see a very small resale discount offered by the LECs. Their hope is that it will give them a large price umbrella which will enable them to persuade the IXCs to use the CAP and CATV networks for resale, not the LEC networks. Thus, ironically, **as on unbundled rates, the CAPs, CATVs and LECs would all like a price as high as possible (small discount), while the IXCs and pure resellers would like rates as low as possible (large discount).**

As far as we can see, the FCC's potential role in this whole debate is to offer the definitions of "retail rate" and "avoided cost." It is unlikely that the FCC will decree a specific number discount, for two reasons. One reason is purely political: to do so would step pretty hard on the State Commissions' toes. The other reason is that each company's cost structure is somewhat different, and thus likely to result in a different actual discount. Differently structured contracts with obligations assigned differently among the parties also are likely to result in different cost pictures. Thus, a generic number is unlikely to make sense. The FCC can, however, specify what costs should be considered in the avoided category.

It is important to note that because resale prices mirror current retail prices, they contain within them the cross-subsidies that are built into the current retail rate structure. On the other hand, unbundled elements are to be priced at cost-plus, under whatever definition of cost the FCC chooses. Thus, unbundled elements will not mirror retail prices and will not reflect the current system of cross-subsidies. It is, of course, inevitable that with such different standards for pricing unbundled vs. resold facilities, new entrants will arbitrage the two standards against each other. That is made particularly easy by the fact that the products and services which provide most of these cross-subsidies to local rates are switch-based. In fact, the chief characteristic of access charges, toll, and value-added services is that these services all have the switch as their primary cost component. Their other characteristic is that they are priced way above their marginal cost. Now, on the scale of network investment, switches are pretty cheap. Thus, it is economic for many new entrants to install their own switches and pick off these profitable products and services. **When they do, the LEC is left with substantial revenue deficiencies, unless the unprofitable products and services can be priced at their true costs. That, however, is politically unpalatable--politicians are not eager to announce large hikes in basic rates.** And in rural states, the hikes would be very large, indeed, if consumers had to cover the true cost of service to a remote farm or ranch.

An illustration may help here. Let us take two customers. Jones' monthly bill is $20, all basic local service. The local portion of Smith's monthly bill is $100, $20 of it basic, the rest access charges, toll and value-added services. Let us assume a 20% discount from retail under resale. Let us also assume that the unbundled loop can be leased for $24, which happens to be the NYNEX rate in New York. A rational competitor will resell Jones' line for $16 ($20-20%) rather than pay $24 for a $20 customer's loop. The competitor will not, however, resell Smith. Under the resale tariff, the competitor would pay $80 to the LEC for Smith ($100-20%) and net $20. Under the unbundled tariff, the competitor would pay $24 for the loop and bear his own switching costs, which are likely to be in the neighborhood of $10 for this customer. The competitor will clearly lease the line under the unbundled tariff if he is allowed to retain the access, toll and value-added revenues on that line, because he nets $76 before his switching costs and about $66 after. Naturally, the results would look somewhat different if the unbundled rate were

lower or the resale discount much more steep, but they would still point in the same direction.

VIRTUAL UNBUNDLING MATTERS

It is not difficult to see that arbitrage of unbundled vs. resale rates leaves the LECs exposed to cream-skimming, and threatens serious reductions of their revenues and margins over time. Further complicating matters is an issue, known under several names as virtual unbundling, virtual resale, or rebundling. This issue, which is becoming a matter of rather hot debate, is whether the unbundled tariff can be used by a competitor whose network consists entirely or almost entirely of LEC facilities. Part of that question is whether the competitor would be allowed to retain the access charges on such a line.

Virtual unbundling matters for two reasons. One is the timing of entry into the local market and the other is the profitability of that entry. Moving a customer's loop from one carrier's switch to another's is a time consuming activity. An RBOC is likely to be able to move at most a million lines in a given year, or roughly 5% of its lines. The LECs' constraints in connecting unbundled loops may well be most problematic in the early years of local competition, for two reasons. One is that processes and systems have not yet been perfected. The other is that the largest share swings may occur when the market is first opened.

If competitors gain large chunks of market share rapidly, they cannot be fully accommodated under actual physical unbundling of loop from switch. They can, however, be accommodated rapidly and in any large quantity if the loop and switch do not have to be physically separated--ie., under resale and or under virtual unbundling. Physically the two processes are identical--the loop and switch are never separated and so there is no limit on the number of lines that a competitor can take in a short period. But the pricing is very different. As explained above, under the resale tariff there is a discount from retail that will probably be narrow and may well be an identical percentage of the end-user's bill regardless of the size of that bill. Under the unbundled tariff there is a fixed, cost-based price for the elements, regardless of the size of the end-user's bill. Thus, under the unbundled tariff, the percentage discount from retail could vary enormously depending on the size of the end-user's bill and depending on which carrier is allowed to keep access charges and value added revenues. **Virtual unbundling would allow the IXC (or other new entrant) to physically resell the line but to do it under a tariff that makes it possible to cream-skim the LEC without having to make any capital investment. It is an IXC's dream and a LEC's nightmare.**

Both parties make credible arguments for their position under the Telecom Act, which is to say that the Act seems to give no clear guidance. There seems to be little dispute that the law intends new entrants to be able to combine unbundled elements with their own facilities under the unbundled tariff. There is also little dispute that if a new entrant combines its own switch with leased unbundled loops, the competitor gets whatever revenues are generated off that switch, namely access charges and some value added service revenues. What is under dispute is what happens if the competitor does not contribute its own facilities, but simply resells those of the LEC. The law is not very clear on this issue--in fact, it seems self-contradictory. The Telecom Act clearly allows resale at retail minus avoided cost. It also clearly allows unbundling and the combining of unbundled elements. But it is not clear that it allows those combined unbundled elements to be tariffed under the resale tariff, nor that it allows bypass of access charges under virtual unbundling. In other words, it is not clear that Congress meant to offer the competitors a choice of tariffs under which to resell. The LECs argue that virtual unbundling is in fact resale and ask why Congress created the resale tariff if it wanted competitors to be able to buy the whole line on an unbundled basis? The IXCs argue that in buying all the elements of the line on an unbundled basis at cost-plus, they have fully paid for the line and should not be charged access charges on top of that. The

Justice Department has supported the IXCs in this instance, because it believes virtual unbundling will accelerate competition. Congress provided little explicit guidance on these issues, nor for that matter on access charges in general.

We have belabored this somewhat arcane point because it has significant financial implications in the early years of competitive local entry. If the FCC allows competitors to enjoy virtual unbundling, they will be able to cream skim the LECs as fast as they can get end-user market share. If it does not allow it, they are limited by two factors--the speed of their own facilities deployment and the rate at which LECs can move lines from their own switches to their competitors'. If competitors have to pay resale rates on lines that are not fully unbundled, or pass back the access charges etc. to the LECs, the competitors can cream skim only a limited part of the LECs' base: about 5% of the lines in the first year, 10% in the second, etc. The constraint, of course, is that the LECs cannot get more than 5% moved to the competitor's switch in any given year, at least until more rapid processes are developed. The competitors will have to serve the rest under resale tariffs that are not profitable to them. Thus, **it would be very problematic for the IXCs if the FCC forbade use of virtual unbundling. However, if it allows it, then the siphoning off of the LECs' profits is accelerated. Virtual unbundling would also be problematic for the CAPs. The CAPs' primary business today is access bypass. If IXCs can accomplish the same goal with virtual unbundling, the CAPs will lose their reason for being.** Over time, of course actual unbundling will largely take over from virtual unbundling, as competitors make their investments and get their facilities connected. Thus, **the issue is primarily a short term issue**

It is, however, a short term issue that may well have some relevance to RBOC long-distance entry. For one thing, the DoJ and FCC may not feel that they can allow RBOCs to enter long-distance if they are unable to fill many orders for unbundled lines in a timeframe comparable to their own retail order-fulfillment. To put it another way, the unbundling requirement could include implementation criteria rather than simply be a list of elements. Secondly, this issue may be considered in relation to RBOC entry because it could have a large impact on the stability of each industry's profits.

Again, a hypothetical example may help clarify the issue. Let us assume that both the RBOCs and the IXCs begin competing in each other's markets on the same day. Let us further assume that within a year they both convince the same number of end-users to switch, and that number is large, say 15% share per RBOC. That amounts to roughly 3 million lines per RBOC. We are using 15% because that is the market share Southern New England Telephone (SNG-$42) has taken in Connecticut in one year. The RBOCs are entering long distance on a resale basis. They can connect those 3 million customers to their leased long distance trunks within days, or at worst weeks. They will be in the long distance business immediately. Based on contracts that have been announced, it is likely that they will get discounts on those trunks of at least 80% below retail. Thus, they will not only be in the long distance business immediately, but profitably. Long distance, thus, will provide the RBOCs with cash flow fairly quickly to compensate for some of the cash flow they will lose out of their local business. In addition, if most of the share they lose in the local market is under the resale tariff, their local cash flow loss will be fairly minimal.

This hypothetical picture is very different for the IXCs, unless they can practice virtual unbundling. The IXCs' will lose large chunks of share and profits to the RBOCs in the long distance market immediately. However, they will not be able to gain compensating profits out of the local market for some time, since the RBOCs, as we mentioned earlier, cannot connect more than about 1 million lines per RBOC per year. The 3 million customers could take 3 years to be served on a fully unbundled basis. Thus, the IXC would be forced to use resale. However, the resale discounts that have been granted in the local market so far are in the 5-25% range, not the 80% level. Thus, the IXC's local entry under resale will not be

profitable. The IXCs will lose profits out of long distance without being able to make them up in the local market. If the FCC allows virtual unbundling, both sides can immediately and profitably serve whatever customers they gain, and can take cash flow from each other's businesses. This issue has concerned investors for some time now. Thus, investors will focus on the FCC's ruling on virtual unbundling.

The converse is also important to understand. If the FCC does allow virtual unbundling but does not allow the RBOCs into long distance rapidly, then the RBOCs will lose large portions of their local revenues without being able to compensate for them out of the long distance business. **The financial stability of each side of the industry depends primarily on one or two critical FCC decisions. For the IXCs, it is critical to have true and profitable entry into the local market before the RBOCs enter long distance. For the RBOCs, it is important not to have a long lag after the IXCs enter the local market, before the RBOC enters long distance. It is also critical to have wholesale rates for unbundling and access that are realistic. If the FCC requires virtual unbundling to ensure the health of the IXCs, it also needs to ensure that the unbundling is done at rates that do not facilitate uneconomic cream skimming of the LECs' base.** Some cream-skimming is inevitable in any business, but what investors will want to track is how extensive it is likely to be.

REGIONAL BELL ENTRY INTO LONG DISTANCE

In the August decision, it will be important to watch not merely the pricing of unbundled elements, but the list of unbundled elements itself. Its length, the likely difficulty in implementing it, and whether all of it is a prerequisite to RBOC long distance entry are likely predictors of the speed of RBOC long distance entry. The more items there are to be unbundled, the further they are in the field, and the more interfacing of operating systems has to be completed, the longer it will take to meet the checklist for long-distance entry.

Shortly after August 8th, the FCC is likely to begin receiving RBOC applications for long distance entry. The key issues to watch here are:

1. **How much discretion is left to the states on various checklist items? In many cases, the more discretion the states have to set the rules, the easier it will be for the RBOCs to enter long distance.**

2. **How extensive is the list of unbundled elements? How much of it is a prerequisite to entry?**

3. **Have mechanisms like virtual unbundling been put in place to assure that the long distance companies can benefit fully from local entry to compensate for the long distance revenues they will lose? Conversely, will the RBOCs be able to benefit from long distance entry soon enough to offset their loss of local revenues?**

THE IMPLICATIONS OF ACCESS CHARGE RESTRUCTURING

A very large part of the equation of financial stability for the industry is rational access charge restructuring. This summer, the FCC is likely to issue its NPRM on access-charge restructuring. This item should be completed next spring, at the same time as the universal service proceeding. In the short run, it is potentially the single biggest-ticket item, because it will reprice a substantial piece of the LECs' revenues. It is, thus, the most immediate potential threat to LEC earnings. It is, conversely, the single biggest potential boon to the long-distance carriers' earnings. It also could have serious negative implications for the CAPs.

Access charges are paid to LECs to compensate the LECs for carrying calls between the end-user's premises and the IXC's switch. Most of that compensation comes from the long distance carriers, but some of it comes directly from end-users. Access charges constitute a pool of roughly $29 billion in total for the industry. Of that total,

about $7 billion is collected through the fixed monthly subscriber line charge (SLC) paid by the end-user. Of the $22 billion paid by long-distance carriers to the LECs, just over $7 billion is under state jurisdiction, for instate interLATA calls. We estimate that about $6 billion of that $7 billion is for switched intrastate access. Of the remaining $15 billion that is under the federal jurisdiction, about $3 billion is collected from bulk users, under special-access tariffs. Roughly $12 billion is collected on a per-minute basis for interstate switched access. Thus, **access charges are a very large source of revenues to the LECs, nearly 30% of their revenues. For the IXCs, conversely, access charges constitute a cost, in fact, their single largest cost, amounting, on average, to roughly half of their total costs. Finally, for the CAPs, access charges have provided an important opportunity to compete in the local market. CAPs have traditionally gained revenues by underpricing the LECs on access charges, both switched and special.**

It is generally agreed in the industry that switched access charges are priced far above cost. While there is quite a range of estimates, on a purely marginal basis, switched access charges appear to be priced as much as 80-90% above cost. Even on a TSLRIC basis, which includes a substantial amount of shared cost and overhead, the range of industry estimates that we have seen would indicate that switched access is priced 66-80% above cost. That means that on a purely marginal basis, interstate switched access charges are priced $10-11 billion above cost, and on a TSLRIC basis they are priced $7-9 billion above cost. Intrastate access charges could easily be another $4-5 billion above cost on a TSLRIC basis. To sum up, **the combination of $18 billion state and federal switched access charges appears to be above TSLRIC cost by $11-14 billion.**

The reason access charges are so far above cost is that regulators have used access charges as a way to get long-distance customers to subsidize basic local users. Local rates have tended to be priced below cost, especially in rural and high-cost areas, and access charges, as well as toll and value-added services, have made up the difference. Since much of the long-distance revenue comes from businesses, much of the cross-subsidy has been from businesses to consumers, a politically popular move. **In a monopoly environment, that kind of cross-subsidy was sustainable. Under competition, it will not be sustainable.** The CAPs have already begun the process of bidding away access charges from the LECs by underpricing them. The enormous price umbrella provided by the LECs has made that easier for the CAPs. Unbundling will further accelerate the process of bringing access prices down to cost. IXCs can combine their own switches with LEC unbundled loops to avoid paying access charges. As discussed above, if virtual unbundling is allowed, the IXCs will not even have to invest in their own switches to bypass access charges. **These processes clearly will bring down the price of access close to its cost over time.**

However, access charges may be brought closer to cost much more abruptly under the access-charge restructuring proceeding that is being considered by the FCC. The IXCs have asked the FCC to bring access charges down to cost immediately. The IXCs' argument is that the Telecom Act forbids implicit subsidies. Therefore, the amount of subsidy that is necessary should be made explicit and moved to the Universal Service Fund. As mentioned in the discussion on sections 251/252 above, consensus seems to be forming around TSLRIC as a cost standard. Various industry players estimate TSLRIC cost per minute of switched access between 0.5 and 1.0 cent per minute, vs. a current average rate between 2.5-3.0 cents per minute. **Depending on whose estimate is accepted and assuming that states as well as the FCC reprice switched access at TSLRIC, access charges would be cut by $11-14 billion. Were that done in isolation, that would be enough to cut the LECs' operating earnings by roughly 40-50%. Even just the federal portion would result in an operating income cut of 25-35%.**

We hasten to point out that it is not likely that the FCC and the states would take such radical action, nor that they would take it without providing at least some compensating sources of revenues. It is more likely that the phase-down of the per-minute interstate access charges will

be gradual. It could be accompanied by a corresponding increase in the SLC. Every $1/month increase in the SLC would make up for just under $2 billion of the deficiency. On the state side, some of the deficiency could be made up by gradual increases in local rates. The Universal Service Fund should provide another mechanism for dealing with the problem. Having said all that, it is not clear what the sum of all these partial solutions will be, and how much of the gap it will fill.

What does access restructuring mean to the IXCs? That depends not only on the size of the cut in switched per minute prices, but also on the compensating mechanism. For the sake of argument, let us assume that per-minute switched access charges are cut by $11 billion. Now let us assume that the entire $11 billion is made up by increases in the SLC and local rates, all of which are paid by end-users. In this case, the IXCs keep the entire $11 billion cost reduction. They can use it to cut prices to stimulate long-distance growth and they can keep some of the benefit to improve their margins. Which mix of those actions they will take depends on the intensity of competition in the long distance market. If, however, much of the compensation comes from the USF, then the IXCs' net cost-cut is smaller. Let us assume the $11 billion is split between SLC and USF, with $6 billion coming out of the USF. Let us further assume that the USF is funded in proportion to total revenues, with the IXCs contributing about one third of the Fund. In that case, the IXCs would funnel back $2 billion through the USF and receive a net cost reduction of $9 billion. On the other hand, if the USF is funded entirely by the IXCs, then their net cost reduction is only $5 billion. The numbers in this paragraph are hypothetical and represent extreme cases. They also include both federal and state access charges, on the assumption that while the FCC does not have jurisdiction over the state piece, it is likely that many states will mirror the FCC's actions on this issue. **The bottom line on access restructuring, any way we look at it, is positive for the IXCs. It is just not clear what the size of that positive impact will be.**

For the CAPs, the bottom line on access restructuring is negative. Much of the CAPs' business is based on undercutting the LECs' access charges. Any reduction in access charges reduces the umbrella over the CAPs' per minute or bulk access prices. If much of the compensation to the LECs comes from the USF, the CAPs' business may be hurt even more. The IXCs' contribution to the USF does not depend on whether they use LEC or CAP facilities, and therefore their USF contribution does not incent them to switch to CAP facilities. In addition, a large USF could add to the CAPs' costs, if they are expected to contribute to the USF. They would really be squeezed if their price umbrella were lowered at the same time that their costs rise. On the other hand, if the solution is a higher SLC or higher local rates, there may be some benefit to another part of the CAP's business. Those increases would raise the price umbrella over the flat per-line rate charged by the CAPs to end-users. This is not currently a large part of their business, but could become more significant if the price umbrella over that part of the business rose. **Cable companies, who plan to go into the business of providing local service to consumers, would benefit from a higher SLC as well, since it would raise the price umbrella over their monthly telephony rates.**

Another alternative, worthy of at least a brief mention, is one the FCC has used in Rochester, NY City, and Illinois. In those cases, the FCC is allowing the LECs to charge a portion of the access charges directly to long-distance carriers, whether or not they use the LEC's network. That is obviously very helpful to the LEC. This is the only instance we know of in which a carrier is actually partly compensated for share loss. Inasmuch as it reflects the economics of fixed-cost networks, i.e. costs do not decrease just because volume does, the solution makes economic sense. The problem is that it makes it harder for new entrants to compete, because the IXC has to make some payment to the LEC even if its uses its own network or a CAP's. Thus, the bypass becomes less attractive. Were the FCC to implement this practice broadly, it would be harmful to the CAPs.

As the FCC looks at all these issues, it views them as inter-related parts of a single equation. That is why the FCC is likely to issue the access NPRM in the same general timeframe as its

ruling on unbundling and resale, and why it is likely to issue the final orders on access charges and on universal service simultaneously.

As the FCC addresses the USF, some of the key issues it is likely to consider are: How large should the USF be? Who should contribute? Who should draw money out of it? Our reading of the Telecom Act indicates that Congress had a fairly small fund in mind, created to compensate companies who are carriers-of-last resort for the burden of serving rural, high-cost, and low-income end-users, as well as for serving schools and some other important institutions.

There are two different passages that deal with the issue of who should contribute to the USF: one indicates that it should be all telecom providers, and one limits it to providers of interexchange services. If the FCC rules that all carriers must contribute, then the net subsidy to the LECs will be reduced by the amount of their contribution. Again, an example. Let us assume that switched access charges today contribute $11 billion in subsidy, and that the subsidy is eliminated overnight. Then the LECs would have a revenue deficiency of $11 billion. Now let us assume that a USF is created, which amounts to $11 billion. If the contributions are from the IXCs and other parties not including the LECs, and the LECs are the only ones who can draw on the fund, then their $11 billion deficiency will be made up. However, if the LECs are also expected to contribute to the Fund, in proportion to their revenues as a percentage of industry revenues, then they will contribute most of the money in the Fund, about $7 or $8 billion. Their net take from the Fund will only be $3-4 billion, and they will have a revenue deficiency equal to their contribution.

SOME FINAL THOUGHTS AND RECOMMENDATIONS

We have touched on each of these issues separately, but we believe the FCC is looking at them very much as pieces of a single whole. The FCC understands that each of these issues would move large flows of funds from one sector of the industry to others. The FCC also understands that it cannot afford to seriously damage the financial health of any sector, particularly those of the traditional major players. A strict construction of the law could lead to results that totally destabilize all parts of the industry. Radical restructuring of LEC rates via unbundled prices and access rates set at a marginal cost would destroy LEC profits in one swipe. It would also destroy the CAPs, who have not yet had a chance to establish a major business for themselves other than access bypass. Rapid, wholesale entry of LECs into long distance, before the IXCs have had a chance to establish themselves well enough in the local markets to begin to draw cash flow from those to compensate for the revenues and cash flow that will be lost in long distance, would devastate the IXCs. That is, in turn, a major threat to local competition, because the IXCs with their capital and more importantly with their brands and market share ultimately provide thebest hope for wresting residential share from the LECs. The FCC understands these issues and is not interested in creating such dire results. It is interested in having healthy competitors enter the local market profitably, but it is also interested in keeping the LECs healthy, so that they will be able to continue to provide universal service for a long time to come.

It is our belief that investors have focused on the risks to the IXCs, but have not focused as fully on the risks to the RBOCs. Thus, we continue to recommend purchase of AT&T and MCI, but have only HOLD ratings on the RBOCs (other than Pacific Telesis (PAC-$33) which we would sell, because of the enormous downside should the merger with SBC (SBC-$49) fail).

Anna-Maria Kovacs, Ph.D.

Additional information relative to the securities mentioned herein is available upon request.

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Dow Jones Industrials	(7/3/96)	5720.38
S&P 500 Stock Index	(7/3/96)	673.61